

Ventilator Liberation Protocol Criteria for Spontaneous Breathing

Trial and Extubation Readiness



1. Screen first by Oxygenation Criteria (all must be present):

- a. $FiO_2 \leq 50\%$ b. $PEEP \leq 8.0$ c. $SaO_2 \leq 88\%$ d. Not prone, paralyzed, or on Flolan

2. Between 0800 and 1000, RT asks RN about Hemodynamic Criteria →
"Is the patient hemodynamically stable?" (if Yes - proceed)

Screen **Hemodynamic Criteria** (all must apply to proceed to #3); If any infusions exceed these doses, or patient is on Flolan, stop and reassess when weaned:

- | | |
|------------------------------------|-------------------------------------|
| a. Norepinephrine ≤ 2 mcg/min | e. Dobutamine ≤ 5 mcg/kg/min |
| b. Phenylephrine ≤ 50 mcg/min | f. Dopamine ≤ 5 mcg/kg/min |
| c. Epinephrine ≤ 1 mcg/min | g. Milrinone ≤ 0.25 mcg/kg/min |
| d. Vasopressin - none | h. No inhaled Flolan |

3. Determine if patient has an intact respiratory drive

If no spontaneous efforts seen reassess, after cutting to half the V_E for ~ 5 minutes!

4. Inform RN of plan to start SBT (PS 7 for ETT = # 8.0 and use PS 8-10 for ETT <8)

Note: Sedation is not a contraindication; but if on, discuss w/ RN stopping or decreasing if no contraindication i.e. alcohol/benzodiazepine withdrawal, active seizures, \uparrow ICP, or agitation)

Example: "This patient appears ready for an SBT. Are you able to interrupt or minimize the sedation to avoid failing the SBT (due to apnea or inadequate tidal volumes)?"

4. RESULTS of SBT: Pass vs Fail?

- The first SBT only needs to be 30 minutes. Subsequent SBT's should be 120 minutes. However, if the patient does well at 60 min, inform RN to hold TEN & assess extubation criteria w/ them (see #5 below).
- If patient fails, document and report to the team the reason for failure:
 - Inadequate Ventilatory Drive** – Low V_E with normal or low RR^*
 - Unable to tolerate work load** – Rapid shallow breathing or just tachypnea
 - Hypoxemia**
 - Hemodynamic instability** – Excessive tachycardia, bradycardia, or changes in BP

5. If patient passes their SBT (assess at 1hr), perform an extubation screen (ES) with RN:

- Is patient awake and responsive to verbal commands? YES or NO (needs to be YES)
- Can patient **protect airway**? Is cough reflex intact (needs to be YES) (Note: Gag reflex may be absent)
- Is cough strength at least satisfactory:** (1. Weak 2. Satisfactory 3. Strong) YES or NO (should be YES but may tolerate weak cough if there are minimal secretions and/or rhonchi)
- Is Suctioning Frequency** equal or less than Q4 hrs (should be YES but may tolerate higher frequency if cough is strong)
- Any concern about upper airway patency? (Y/N) If Yes, perform cuff leak test with set tidal volume of 500 ml's on assist control ventilation (Test Passed if leak is ≥ 110 ml)

If patient passes SBT (i.e. after 2 hours) and RN/RT agree patient passes Extubation Screen, notify Intensivist to facilitate extubation. Remember to first review extubation risk; and, if high risk, ensure that extubation plan is followed prior to extubation!